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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,815	08/13/2001	Chih-Fei J. Wang	NT1143US	8826
7590		11/19/2004	EXAMINER	
Robert M. Storwick		TALAPATRA, ANIKA F		
P.O. Box 386		ART UNIT		
Mercer Island, WA 98040		PAPER NUMBER		
		2631		

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**Application No. **09/929,815**

Applicant(s)

WANG, CHIH-FEI J.

Examiner

Anika F. Talapatra

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:
  - a. Page 5, line 8 refers to FIR filters 222 and 224 in figure 2. Figure 2 contains FIR filters 222 and 242. Therefore, the corrected phrase should read, "...FIR filters 222 and 224..." Appropriate correction is required.
  - b. Page 6, line 5, refers to output signal 324 in figure 3. Figure 3 contains the output signals 326 and 346, corresponding to IIR filters 324 and 344, respectively. Therefore, the corrected phrase should read, "... IIR BPF 324 allows...output signal 326..." Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

- A person shall be entitled to a patent unless –
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
2. Claims 1, 2, 6, 7, 11, and 12, rejected under 35 U.S.C. 102(b) as being anticipated by Samuelli et al. (EP 0716518 A2) (hereto referred to as Samuelli).

As to claims 1, 6, and 11, Samuelli teaches a converter, a method for converting, and a means for converting, an Intermediate Frequency (IF) signal into a baseband signal consisting of: an In-phase (I) signal, and a Quadrature

Art Unit: 2631

(Q), or differing by 90 from the I signal, signal (see Samuelli, column 4 line 35 to column 6 line 14, figures 1 and 2). Samuelli teaches this system, comprising an analog to digital (A/D) converter (figure 2, element 22), feeding in to two separate paths, one for producing the I signal, and the other for producing the Q signal. The I signal pathway comprises a decimation filter (figure 2, 46) and a matched filter (figure 2, 50). The Q signal pathway comprises <sup>another</sup> a decimation filter (figure 2, 48) and <sup>another</sup> a matched filter (figure 2, 52). This is functionally equivalent to the first and second bandpass filters for producing an I and a Q signal, respectively, as claimed by the applicant.

As to claims 2, 7, and 12, Samuelli teaches a converter, a method for converting, and a means for converting, an IF signal into a baseband signal consisting of an I signal, and a Q signal (see Samuelli, column 4 line 35 to column 6 line 14, figures 1 and 2). Samuelli teaches this system, comprising two separate paths, one for producing the I signal, and the other for producing the Q signal. The I signal pathway comprises a cosine multiplier (figure 2, element 40). The Q signal pathway comprises a sine multiplier (figure 2, element 42).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2631

3. Claims 3, 4, 5, 8, 9, 10, 13, 14, and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Samuelli in view of MathWorks (MathWorks Inc., Windowing method) (hereto referred to as MathWorks).

As to claims 3, 8, and 13, Samuelli teaches a converter, a method for converting, and a means for converting, an IF signal into a baseband signal consisting of an I signal, and a Q signal (see Samuelli, column 4 line 35 to column 6 line 14, figures 1 and 2). Samuelli does not teach a method for band pass filter design. MathWorks teaches a method for band pass filter design, using a SINC function. Using a SINC function for filter design is a well known method for filter design in the art. Therefore, it would be obvious to one of ordinary skill in the art to use a SINC function for filter design of the filters used in the system taught by Samuelli.

As to claims 4, 9, and 14, Samuelli teaches a converter, a method for converting, and a means for converting, an IF signal into a baseband signal consisting of an I signal, and a Q signal (see Samuelli, column 4 line 35 to column 6 line 14, figures 1 and 2). Samuelli does not teach a method for band pass filter design. MathWorks teaches a method for band pass filter design, wherein the impulse response of the band pass filters are truncated using a window function. Using a window function for filter design is a well known method for filter design in the art. Therefore, it would be obvious to one of ordinary skill in the art to use a window function for filter design of the filters used in the system taught by Samuelli.

As to claims 5, 10, and 15, Samuelli teaches a converter, a method for converting, and a means for converting, an IF signal into a baseband signal consisting of an I signal, and a Q signal (see Samuelli, column 4 line 35 to column 6 line 14, figures 1 and 2). Samuelli does not teach a method for band pass filter design. MathWorks teaches a method for band pass filter design, wherein the impulse response of the band pass filters are truncated using the Hamming window function. Using the Hamming window function for filter design is a well known method for filter design in the art. Therefore, it would be obvious to one of

Art Unit: 2631

ordinary skill in the art to use the Hamming window function for filter design of the filters used in the system taught by Samuelli.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

a. The MathWorks Inc., 1994-2004, Windowing Method.

[www.mathworks.com/access/helpdesk/help/toolbox/signal/filterd8.html](http://www.mathworks.com/access/helpdesk/help/toolbox/signal/filterd8.html);

b. Dogandzic, A., 2002, Iowa State University, FIR Filter Design, and Introduction to Digital Filters. [clue.eng.iastate.edu/~ald/ee424/l7.pdf](http://clue.eng.iastate.edu/~ald/ee424/l7.pdf);

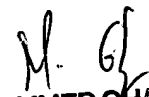
c. EP 0716518 A2, November 1995, Germany, Samuelli et al. H04H 1/00;

d. and U.S. Patent 5809009, Matsuoka et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anika F. Talapatra whose telephone number is 571-331-1982. The examiner can normally be reached on 08:00-16:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER